

BUFFALO

"BEST BUILT"

UNDERWRITER FIRE PUMPS

CIRCULAR No. 242

BUFFALO STEAM PUMP COMPANY

BUFFALO, N. Y., U. S. A.

**Manufacturers of Steam, Power and Centrifugal
Pumping Machinery, Vacuum Pumps and Con-
densers of Every Description For All Requirements**

WORKS: NORTH TONAWANDA, N. Y.

**NEW YORK
PHILADELPHIA
CHARLOTTE
BIRMINGHAM
MONTREAL, CANADA**

**CHICAGO
PITTSBURG
BOSTON
KANSAS CITY
DENVER**

**ST. LOUIS
CINCINNATI
MINNEAPOLIS
LOS ANGELES
LONDON, ENGLAND**



Buffalo Underwriter Fire Pumps

In Accordance with Latest Specifications of Underwriters

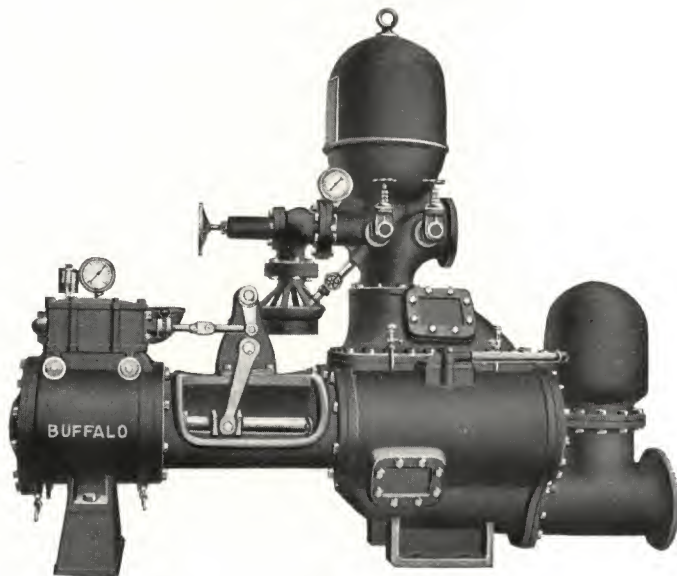


Fig. 726

Size, 18 x 10 x 12

Note:—In ordering, forward to our factory at North Tonawanda, N. Y., a hose coupling to be used as a template for threading hose valves on pumps, as different cities have different hose coupling standards. The template sent us should be carefully marked for identification and will be returned with the pump in box of fittings accompanying same.



BUFFALO PUMPS

CIRCULAR No. 242



Buffalo Duplex Underwriter Fire Pumps

"Underwriter Pump" is the name adopted by the Associated Factory Mutual Fire Insurance Companies, to designate a duplex steam fire pump, built in strict accordance with the latest revised edition of the specifications issued by them.

The principal points of difference between the Underwriter Pump and the ordinary commercial pump are:

1st—Its steam ports and water passages and air chamber are made much larger than in common trade pumps, so that a larger volume of water can be delivered in an emergency without water hammer.

2nd—It is "rust-proofed," that it may start instantly after disuse, by making its piston rods and valve rods of tobin bronze, instead of steel; its water pistons, stuffing boxes and rock shaft bearings of brass, instead of cast iron. Its valve levers are made of steel or wrought-iron forgings, or of steel castings.

3rd—The following necessary attachments are all included in the price of the Underwriter Pump, viz.: A vacuum chamber, two pressure gauges, a relief valve, a set of brass priming pipes, 2 to 6 hose valves, a stroke gauge, a capacity plate, an oil pump, a sight-feed lubricator and a cast-iron relief valve discharge cone and air vent connection.

To maintain 100 pounds water pressure while operating at full speed this pump requires the following boiler horse power: 500 gallon pump, 100 H. P. at 40 pounds steam pressure; 750 gallon pump, 115 H. P. at 45 pounds; 1000 gallon pump, 150 H. P. at 45 pounds, and the 1500 gallon pump, 200 H. P. at 50 pounds steam pressure. In some instances it is advisable to install a larger pump than the existing boiler can drive at full capacity, as a small boiler will drive a 750 gallon pump at the 500 gallon speed with as good economy as it can drive the 500 gallon pump at full speed. When this is done, the pump does not need to be changed when the plant is enlarged and the boiler power increased.

Number of Gallons Underwriters' Rating	Diameter of Steam Cylinders	Diameter of Water Plungers	Length of Stroke	Number of Revolutions per Minute	Pipe Sizes				Approximate Width and Length Inches	Code Word Brass Fitted Including All Fittings
					Steam	Exhaust	Suction	Discharge		
500	14	7	12	70	3	4	8	6	37 x 110	<i>Dfkla</i>
750	16	9	12	70	3½	4	10	8	42 x 114	<i>Dfkot</i>
1000	18	10	12	70	4	5	12	8	48 x 120	<i>Dfkepe</i>
1500	20	12	16	60	5	6	14	10	52 x 146	<i>Dfkit</i>

Prices include fittings as specified by Underwriters.



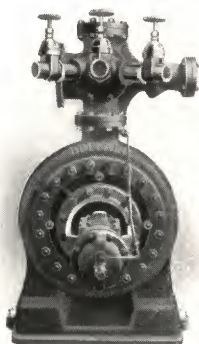
B U F F A L O P U M P S

CIRCULAR No. 242



Buffalo Multi-Stage Centrifugal Underwriter Fire Pumps

Approved by National Board of Fire Underwriters



The requirements met in the design of the Buffalo Centrifugal Fire Pumps are known as the "National Standard Specifications." In standard patterns they are built in either two or three-stage types, at present. All drawings from which these machines are built have been submitted and approved by the Underwriters' Inspection Department, and sample machines tested out thoroughly by them. The large number of these pumps installed for mills, railroads and cities for fire protection in various parts of the country, signify the approval and success they have won.

In construction material of these pumps, all impellers, diffusion vanes, glands, clearance rings, interior nuts, linings of stuffing box throats, etc., are made of high-grade bronze. In design they are the same as the standard Buffalo Multi-Stage Pumps.

With these pumps we can furnish on special order "non-combustible partitions" for erection between pump and motor, as suggested by the Underwriters in their specifications. For these partitions, if the customer wishes us to furnish same, small extra charge is made.

Note:—In ordering pumps, forward to our factory at North Tonawanda, N. Y., a hose coupling to be used as a template for threading hose valves on pumps, as different cities have different hose coupling standards. The template sent us should be carefully marked for identification, and will be returned with the pump in the box of fittings accompanying same.

Specifications of pumps sent on request.



Underwriters' Test.

Underwriter Foot Valves

(WITHOUT STRAINERS)

Size Suction Pipe
6-inch
8-inch
10-inch
12-inch

Code Word
Qapav
Qapdi
Qapew
Qapho

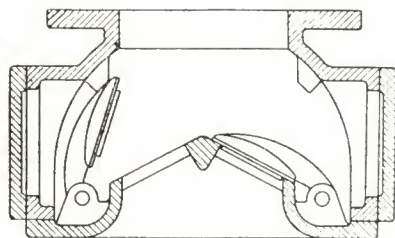
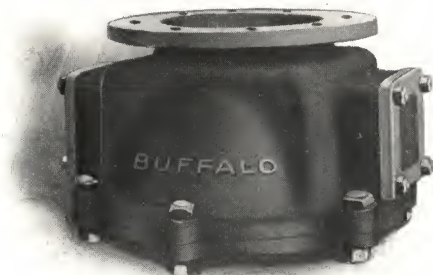


Fig. 1150

Views of Underwriter Foot Valve

Fig. 1151



B U F F A L O P U M P S

CIRCULAR No. 242



Buffalo Multi-Stage Centrifugal Underwriter Fire Pumps

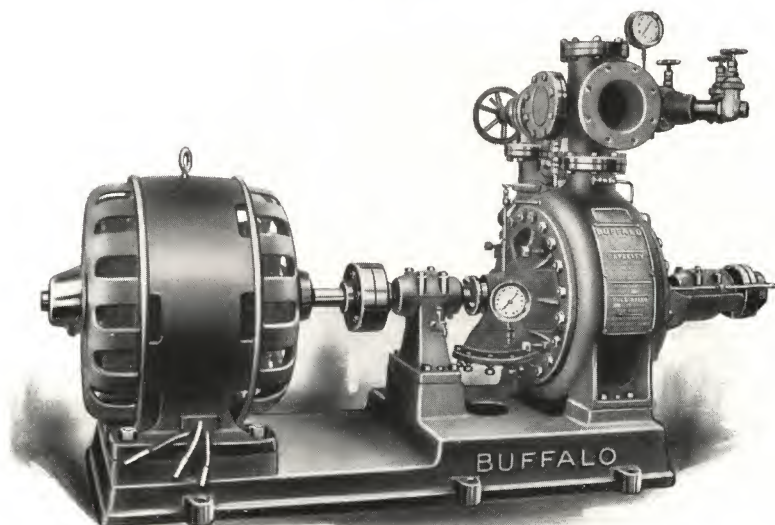


Fig. 1153

750-Gal., Two-Stage, Motor Driven, With Relief Valve

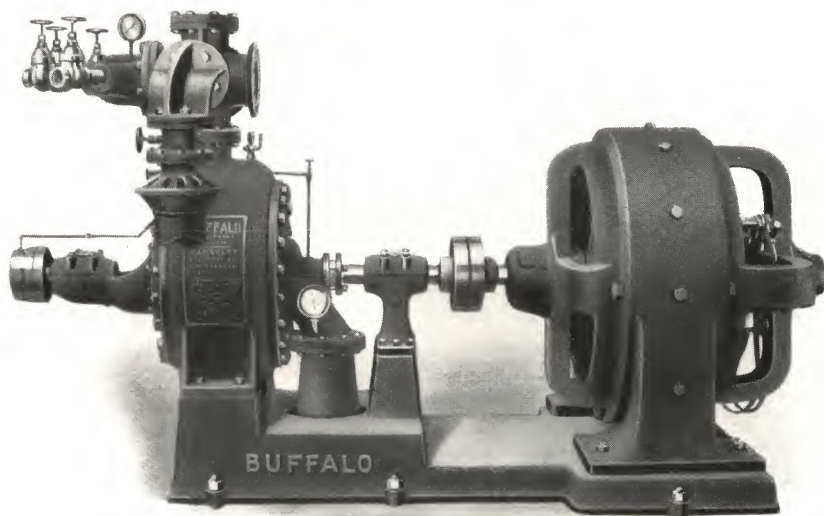


Fig. 1155

1000-Gal., Two-Stage, Motor Driven, Without Relief Valve



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CIRCULAR No. 242



Buffalo Multi-Stage Centrifugal Underwriter Fire Pumps

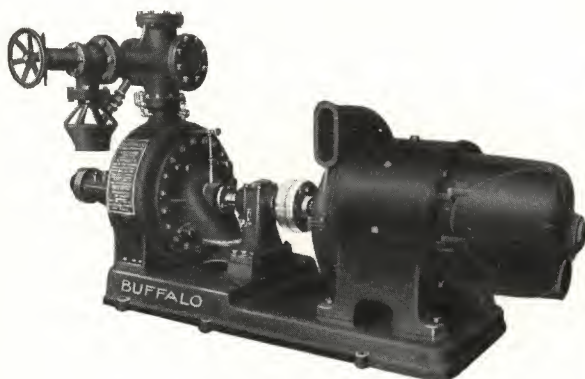


Fig. 1154
750-Gal., Two-Stage, With Relief Valve,
Direct Connected to Enclosed Motor

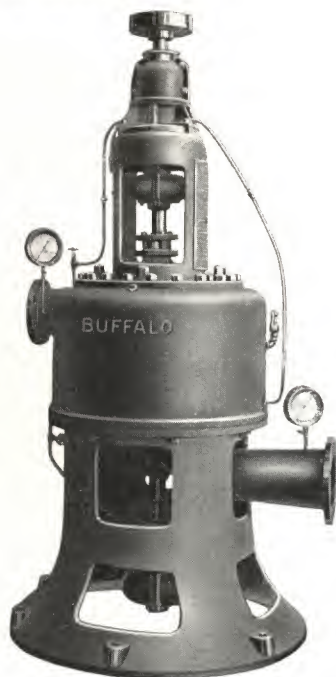


Fig. 1160
750-Gal., Three-Stage, Vertical
Shaft, for Direct Connection
to Motor

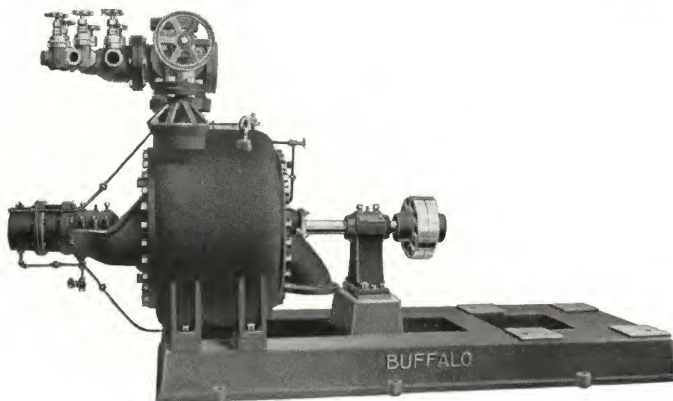


Fig. 1157
1500-Gal., Three-Stage, Motor Driven, With Relief Valve



Buffalo Multi-Stage Centrifugal Underwriter Fire Pumps

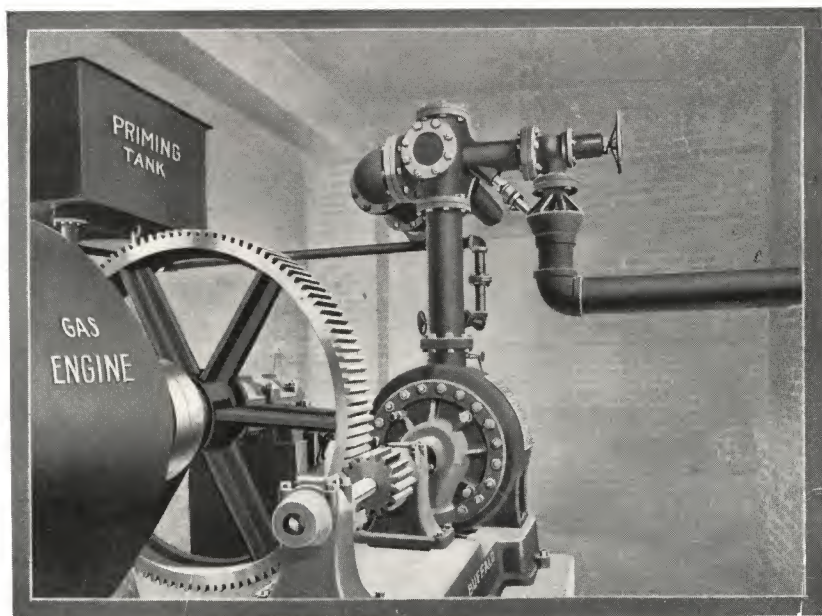


Fig. 1161

Special 750-Gallon.Two-Stage, With Relief Valve, Gear Driven from Gas Engine

Capacity Galls. per Minute Underwriters' Rating	Suction	Discharge	Number 2½ Hose Valves	Approximate Floor Space Required	Approximate Overall Height	STANDARD TWO-STAGE PUMP	STANDARD THREE-STAGE PUMP
						Code Word Complete Except Motor and Electrical Equipment *	Code Word Complete Except Motor and Electrical Equipment *
Horizontal Shaft Type.							
500	6	6	2	6'-11" x 3'-6"	5'-3"	<i>Qanat</i>	<i>Qanty</i>
750	8	8	3	6'-11" x 3'-6"	5'-3"	<i>Qande</i>	<i>Qanuz</i>
1000	8	8	4	7'-8" x 3'-8"	5'-8"	<i>Qanev</i>	<i>Qanyb</i>
1500	10	10	6	9'-2" x 4'-7"	6'-9"	<i>Qanhi</i>	<i>Qanza</i>
Vertical Shaft Type.							
500	6	6	2	4' x 4'	9'-0"	<i>Qaniw</i>	<i>Qaobt</i>
750	8	8	3	4' x 4'	9'-0"	<i>Qanio</i>	<i>Qaods</i>
1000	8	8	4	4' x 4'	9'-0"	<i>Qanoz</i>	<i>Qaogn</i>
1500	10	10	6	5' x 5'	10'-4"	<i>Qanpu</i>	<i>Qaohk</i>

Prices include fittings specified by Underwriters.

*Extension vertical shaft, various bearings, couplings, etc., required on Vertical Shaft Pumps at extra price only. State distance from base of motor to foundation of pump.

As per the requirements of the Underwriters, with a suction lift of 10 feet or more and a length of pipe exceeding 20 feet, or with more than two elbows, the suction pipe must be 2 inches larger than that shown in the above tables, and a special reducing casting must be used to connect this larger suction pipe with the pump.

We recommend that where Vertical Shaft Underwriter Pumps must be installed they be placed in dry wells instead of submerging the pump, as it will permit more ready inspection.

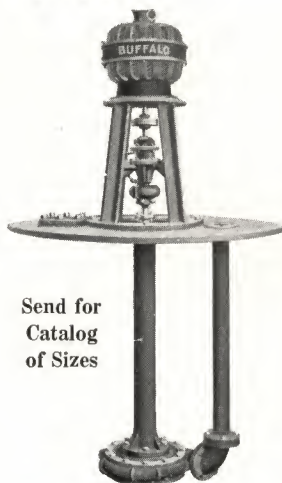


BUFFALO PUMPS

CIRCULAR No. 242



Buffalo Sump Pump



Send for
Catalog
of Sizes

1. A self-contained outfit which on arrival needs only to be uncrated, connections to the automatic starter and motor made, and the unit is ready for operation.

2. Shaft is entirely closed and *really* is protected from action of sump water and possibility of fouling from waste or stringy matter flowing into sump pit.

3. Ball-bearing thrust is provided to carry weight of moving parts, lower ball race resting on spherical seat to permit it to adjust to conditions of alignment.

4. Oil—NOT GREASE—is used to lubricate this thrust. For intermittent operation at high speed nothing could be a poorer lubricant than grease, which is thrown away from the bearing surfaces by the rapid rotation, and owing to the fact that the pump operates for only a few minutes at a time to empty the sump, the grease does not get warmed up and become fluid enough to flow to the bearing surfaces.

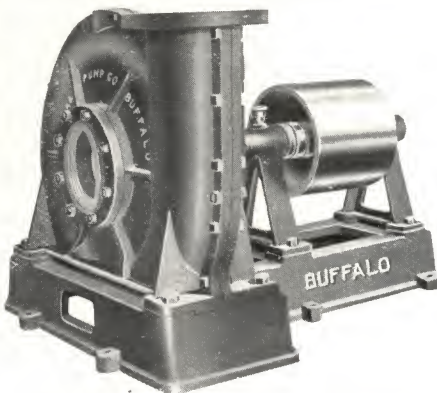
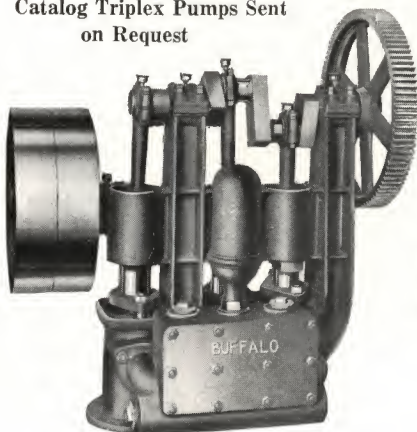
5. Oil lubricant is supplied to the ball-bearing thrust automatically in a continuous flood while pump is in operation.

6. Stuffing-box and gland around shaft at cover plate prevent any steam, gases or foul odors rising into room, if edge of cover plate be caulked tight.

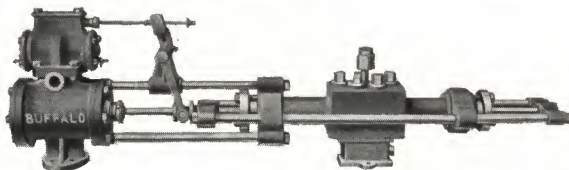
7. All parts of outfit easily accessible.

In sending inquiry state whether standard depth of 4 foot sump pit will be used, the total head against which the pump will operate, and what electric current is available to operate motor.

Catalog Triplex Pumps Sent
on Request



Centrifugal Pump Catalog on Request
Showing all Styles Single-Stage Pumps



Size, 7x1x8
Forged-Steel End Hydraulic
Pump

Ask for Catalog on Single-Cylinder
and Duplex Pumps for all
Pressures and Service

